

FOJT, E.; GINE, L.

Bundle branch block detected in effort test. Kardiol. Pol. 7  
no. 4:323-325 '64

FOJT, Eugeniusz

Effect of heparin on blood coagulation in arteriosclerosis.  
Pol. arch. med. wewnet. 35 no. 8:1197-1202 '65.

1. Z III Kliniki Chorob Wewnętrznych Śląskiej AM w Katowicach (Kierownik: prof. dr. med. K. Gibinski).

FCJT, V.

SCIENCE

PERIODICALS: GMETEOROLOGICKÉ ZPRÁVY Vol. 11, no. 6, Dec. 1958

FCJT, V: Rain gauge for microclimatological and ecologic studies. p. 156

Monthly list of East European Accessions (EEA) LC, Vol. 8, No. 5,  
May 1959, Unclass

FOJT, V.

Precipitations on a strip clearing of pine forest. Meteor  
zpravy 17 no.6:179-184 D '64.

1. Research Institute of Forestry and Game Keeping,  
Zbraslav-Strnady.

L 17573-66

ACC NR: AP6009472

SOURCE CODE: CZ/0085/65/000/002/0041/0047

AUTHOR: Fojt, Vojtech

ORG: Research Institute of Forest Management and Gamekeeping (VU les. hosp. a mysl.)

TITLE: Circumglobal radiation on a clear felling (microclimate of clear fellings, Part II)

SOURCE: Meteorologicke zpravy, no. 2, 1965, 41-47

TOPIC TAGS: radioactivity measurement, nuclear physics apparatus, microclimatology, forestry, solar radiation

ABSTRACT: Circumglobal radiation in a clear felling was studied with Bellani spherical pyranometers. The results of radiation measurements were compiled with reference to solar declination, the presence of clouds and, in winter, the effects of snow cover. The horizon cover also was measured and the maximum possible time of solar exposure for individual places in the felling was determined. The results are compared with similar observations of V. Krecmer in gap cut plots. Orig. art. has: 9 figures and 6 tables. [JPRS]

SUB CODE: 04, 02, 18, 03 / SUBM DATE: none / ORIG REF: 006 / OTH REF: 008

SOV REF: 001

Card 1/1 nst

UDC: 551.521.1/551.584:634

L 31746-66 FCC. GW

ACC NR: AP6021162

SOURCE CODE: CZ/0085/65/000/004/0103/0107

AUTHOR: Fojt, Vojtech

ORG: Forest Management and Wild Animal Life Research Institute (VU les. hosp. a myslivosti)

TITLE: Snow conditions in a strip cut area. <sup>12</sup>Microclimate of the strip cut area. IV

SOURCE: Meteorologické zpravy, no. 4, 1965, 103-107

TOPIC TAGS: snow, microclimatology, climatic condition

ABSTRACT: The article reports on snow conditions (duration, depth, water value, density and, in the period of thaw, the limit of snow cover). The results are compared with the forest stand, open area and observation of snow in a gap cut area. More articles will follow in the series. Orig. art. has: 8 figures and 3 tables. [Based on author's Eng. abst.] [JPRS]

SUB CODE: 04 / SUBM DATE: none

LS

Card 1/1

UDC: 551.578.4: 551.584.41

L 30904-66 EWT(1)/FCC GW

SOURCE CODE: CZ/0085/65/000/005/0138/0143

ACC NR: AP6022944

25  
B

AUTHOR: Fojt, Vojtech

ORG: Forestry and Game Management Research Institute, Bedovice (VU les. hosp. a mysl.)

TITLE: Snow conditions on a stripe cut area. The microclimate of the stripe cut. IV.

SOURCE: Meteorologické zpravy, no. 5, 1965, 138-143

TOPIC TAGS: snow, climatic condition, microclimatology

ABSTRACT: This partial study is a continuation from the preceding number of this journal. All the measurements were made on a test plot of the Forestry and Game Management Research Institute at Bedovice ( $\lambda = 16^{\circ}02' E$ ,  $\phi = 50^{\circ}12'$ , 250 meters above mean sea level). The results of investigations on a stripe cut are compared with those of investigations in the forest stand, open area and gap cut area. [JPRS]

SUB CODE: 04 / SUBM DATE: none / ORIG REF: 004 / OTH REF: 002

Cord 1/1 CC

UDC: 551.584.41: 551.578.46 + 551.579.2

L 10934-66

ACC NR: AP6031006

SOURCE CODE: CZ/0085/66/000/001/0025/0030

AUTHOR: Fojt, Vojtech

ORG: Forestry and Game Management Research Institute (VU les. hosp. a mysl)

TITLE: Freezing of the soil in a strip clear cutting. V. The microclimate of the strip cutting

SOURCE: Meteorologické zpravy, no. 1, 1966, 25-30

TOPIC TAGS: microclimatology, snow, soil physics, freezing

ABSTRACT: The article reports on measurements made with a frost gage mounted in the transect of the strip clear cutting and the forest border. Detailed snow measurements also were made in one winter period. Parallel measurements of soil freezing in free terrain and in a gap cutting also are compared. Orig. art. has: 7 figures and 1 table. [Based on author's Eng. abst.] [JPRS: 36,844]

SUB CODE: 08, 04 / SUBM DATE: none / ORIG REF: 008 / SOV REF: 001

Card 1/1 hs

UDC: 551.584.41: 551.524.37

FOJTACH, Josef

Experience with the sand preparation plant type Junkerath equipped with continuous mixer in the National Enterprise Moravskoslezské elektrotechnické závody, Vsetín. Slevarenství 9 no.11:417-420 N '61.

1. Moravskoslezské elektrotechnické závody, Vsetín.

(Sand, Foundry)

FOJTEK. F.

Designing structures of light concrete blocks. p.232.  
(Pozemni Stavby, Vol. 5, No. 5, May 1957, Praha, Czechoslovakia)

SO: Monthly List of East European Accessions (EEAL) LC. Vol. 6, No. 9, Sept. 1957. Uncl.

FOJTEK, F.

Brick concrete blocks for the building of chimneys. p. 262

POZEMNU STAVBY. (Ministerstvo stavebnictví) Praha, Czechoslovakia. Vol. (7)  
no. 5, (May) 1959

Monthly List of East European Accessions (EEAI), LV, Vol. 8, no. 7, July 1959  
Uncl.

CZECHOSLOVAKIA / General and Special Zoology. Insects.

P

Abs Jour: Ref Zhur-Biol., No 4, 1958, 16492

Author : Fojtik A.

Inst : Not given

Title : How did Terra Sitam act in practice?  
(Kak proyavil sebya Terra Sitam na praktike.)

Orig Pub: Chmelarstvi, 1956, 29, No 11, 171-172

Abstract: An experiment on the use of the systematic insecticide Terra Sitam in the Control of aphids on hops. One hundred ml of the preparation were poured into the roots of each plant; in two days the aphids and other pests died. The treated plants grew better and their yield was 8% higher than that of the control plants. The preparation must be used with special caution because of its toxicity.

Card 1/1

CZECHOSLOVAKIA

BRDICKA, R; SPURNY, Z; FOJTIC, A.

Institute of Physical Chemistry and Institute of Nuclear  
Research of the Czechoslovak Academy of Sciences, Prague

Prague, Collection of Czechoslovak Chemical Communications,  
No 6, 1963, pp 1491-1498

"Effect of the Dose Intensity on the Rate of Radio-Oxidation  
of Cystine in Aqueous Solutions."

FOJTIK, A.; SPURNY, Z.; BRDICKA, R.

New approach to the preparation of  $^{35}\text{S}$ -labelled cystine. Coll  
Cz Chem 30 no.3:892-893 Mr '65.

1. Institute of Physical Chemistry and Institute of Nuclear  
Research of the Czechoslovak Academy of Sciences, Prague.  
Submitted July 16, 1964.

FOJTIK, Dusan, inz.

Manual tester for measuring the hardness of hardened gear wheels  
on the pitch circle. Stroj vyr 12 no.11:818-819 '64.

1. Strojarske a metalurgicke zavody National Enterprise, Dubnica  
nad Vahom.

FOJTIK, F.

Nervous disorders in spontaneous occlusions of arteries of the extremities. Rozhl. chir., 29:6, 1950. p. 197-204.

1. Of the Surgical Department of the State District Hospital in Prague VIII (Head--Prof. Jan Knobloch, M. D.).

CLIL 19, 5, Nov., 1950

~~FOVTEK~~ Frantisek, MUDr, klinicky asistent

Trauma and blood vessel diseases. Prakt. lek., Praha 34 no.22:  
514-518 20 Nov 54.

1. Z chirurg. klin. zakladny Ustavu pro doskoleni lekaru pri  
obv. nem. v Praze 8-Bulovka; prednosta prof. MUDr. Jan Knobloch  
(WOUNDS AND INJURIES  
trauma in etiol. of blood vessel dis.)  
(BLOOD VESSELS, diseases  
eff. of trauma)

FOJTÍK, František, MUDr; LOMSKÝ, Jan, MUDr; SUNTYCHOVÁ, Marie, MUDr

First experiences with percutaneous lienoportohepatography. Cesk.  
rentg. 9 no.3:100-105 Aug 55.

1. Z klinické základny chirurg. katedry UDL při ONV v Praze 8-Bulovka,  
prednosta prof. MUDr Jan Knobloch - z klinické základny roentgenolog.  
katedry UDL při ON v Praze 8-Bulovka, prednosta primar MUDr Josef  
Slanina

(VEINS, PORTAL SYSTEM, radiography,  
percutaneous lienoportohepatography)

FOJTÍK, Frantisek, MUDr

Surgical therapy of arterial obliterations of the lower extremities;  
indications. Rozhl.chir. 34 no.10:583-588 Dec 55.

1. Z chirurgické klinické základny UDL při obv. nem. v Praze  
8-Bulovce; přednosta prof. MUDr J.Knobloch  
(VASCULAR DISEASES, PERIPHERAL,  
arterial obliterating, surg. indic. (Cz))

FOJTIK, Frantisek

Ileus of vascular origin. Cas. lek. cesk. 95 no.46:1284-1287  
16 Nov 56.

1. Klinicka Chirurgicka Zakladna UDL Praha 8, Bulovka, prednosta  
prof. MUDr. Jan Knobloch. Pathologickoanatomicka zakladna UDL  
Praha 8, Bulovka, prednosta prim. MUDr. Josef Viklicky.  
(INTESTINAL OBSTRUCTION, surg.  
angiomesenterial intestinal obstruct. (Cx))

Knobloch, J., Prof., Dr.; Fojtik, Fr., As., Dr.

Causes of the syndrome of the axillary and costoclavicular veins. Roshl. chir. 35 no.12:712-715 Dec 56.

1. Chirurgická klinická základna UDL v Praze 8 - Bulovka  
prednosta prof. dr. J. Knobloch.

(THROMBOPHLEBITIS, etiol. & pathogen.

axillary thrombophlebitis of effort (Cs))

FOJTIK, Frantisek; TOUPALOVA, Hana; VORISEK, Vlastimil

Artificial hibernation in severe cranial & brain injuries. Cas.  
lek. cesk. 97 no.30:927-932 18 July 58.

1. Chirurgicka klinicka zakladna UDL, prednosta prof. MUDr. Jan  
Knobloch, neurologicke oddeleni, prednosta prof. MUDr. Otakar Janota,  
v Praze 8-na Bulovce. F. F. Praha 8, Nad Rokoskou 21.

(BRAIN, wds. & inj.

ther., artif. hibernation (Cz))

(HIBERNATION, ARTIFICIAL, in var dis.  
craniocerebral inj. (Cz))

FOJTIK, F.

Hidden defects of the cranium. Cesk. pediat. 14 no.2:174-176 5 Feb 59.

1. Chirurgická klinická základna UDL (prednosta prof. MUDr. Jan Knobloch)  
a detské chirurgické oddelení (prednosta MUDr. Frantisek Fojtik) v Praze  
8, Bulovka.

(CRANIUM, abnorm.

hidden defects, plastic repair (Cz))

FOJTIK, Frantisek

Certain unusual acute abdominal conditions in childhood. Cas. lek.  
cesk. 99 no.28:886-890 8 J1 '60.

1. Detske chirurgicke oddeleni, Praha 8-Bulovka, prednosta MUDr.Fr.  
Fojtik.  
(ABDOMEN ACUTE in inf. & child)

FOJTIK, Frantisek; CAPEK, Vlastimil

Contribution to non-penetrating wounds of the kidney in childhood.  
Rozhl. chir. 41 no.7:450-452 JI '62.

1. Detske chirurgicke oddeleni, prednosta dr. F. Fojtik Rentgenologicke oddeleni, klinicka zakladnu UDL, prednosta dr. J. Slanina, Praha 8, nemonice Na Bulovce.  
(KIDNEY wounds & inj.)

FOJTIK, F.

Blunt kidney injuries in children. Rozh.chir.42 no.12:889-893 D'63.

1. Oddeleni chirurgie detskeho veku, nemocnice v Praze 8 na Bulovce; vedouci: MUDr. F.Fojtik.

\*

HLEDIK, E.; VOJTECH, K.; FOJTÍK, F.

Traumatic lung changes following closed thoracic injuries.  
Cesk. rentgen. 18 no.2:116-120 Mr'64.

1. Klinická základna rentgenologické katedry UDL v Praze  
(vedoucí: MUDr. J. Slanina) a Dětské chirurgické oddělení  
v nemocnici v Praze na Břevce (vedoucí: MUDr. F. Fojtík)

\*

FOJTIK, F.

To operate or not operate in circumscribed periappendiceal inflammations in children? Rozhl. chir. 43 no.9:587-590  
S '64.

1. Oddeleni chirurgie detskeho veku (vedouci MUDr. F. Fojtik),  
chirurgicka zakladna UDL (vedouci prof. dr. J. Knobloch, DrSc.),  
infekcni klinika (prednosta prof. dr. J. Prochazka, DrSc.) nemocnice v Praze 8.

SNAJDR, V.; KRAKORA, P.; TOMANEK, A.; FOJTÍK, F.

Fate of foreign bodies in the bronchial tree. Rozhl. chir. 44  
no.10:687-694 O '65.

1. Chirurgické oddělení (vedoucí MUDr. V. Snajdr, CSc.), broncho-  
logické oddělení (vedoucí MUDr. A. Tomek, CSc.) Vyzkumného  
ústavu tuberkulózy v Praze 8 (ředitel doc. dr. R. Krivinka) a  
Oddělení dětské chirurgie (vedoucí MUDr. F. Fojtík) státní oblastní  
nemocnice v Praze 8 (ředitel MUDr. V. Panek).

FOJTIK, J.; SEMBERS, L.

"Experiences with pallets for paperboard." P. 83.

PAPIR A CELULOZA. (Ministerstvo lesu a drevarskeho prumyslu). Praha.  
Czechoslovakia, Vol. 14, No. 4, Apr. 1959.

Monthly list of East European Accessions (EEAI), LC, Vol. 8, No. 8,  
August 1959.  
Uncla.

FOJTIK, K.

"I. I. Ivanov-Osmki's Geographical Environment and the Evolution of Society: A Book Review", P. 47, (CESKY LID, Vol. 40, No. 1, Feb. 1953, Praha, Czechoslovakia)

S0: Monthly List of East European Accessions, (EEAL), LC, Vol. 3, No. 12, Dec. 1954, Uncl.

Šedivá, A.; Oslavský, O.

"Development of Mining and the Life of Miners in the Rosice and Oslavany Areas in the First Half of the 19th Century." p. 3,  
(ČESKOSLOVENSKÁ ETHNOGRAFIE, Vol. 3, No. 1, 1955, Praha, Czechoslovakia)

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 4  
No. 5, May 1955, Uncl.

FOJTIK, K.

"Production of Heterogeneous Seed Corn." p. 130, Bratislava, Vol. 6, 1951.

SO: East European Accessions List, Vol. 3, No. 9, September 1954, Lib. of Congress

Fojtik, K.

CZECHOSLOVAKIA / Cultivated Plants.

L-2

Abs Jour : Ref Zhur - Biol., No 6, March 1957, No 22681

Author : Fojtik

Inst : Not given

Title : Some Results of Agrotechnical Experiments with Corn

Orig Pub : Pol'nohospodarstvo, 1956, 3, No 1, 109-117

Abstract : The deciding factor in securing large corn crops in Czechoslovakia is the time of sowing (April 18-30 in the southern regions and May 3-5 in the central regions). The early sowings always produce better results despite possible damage by early frosts and are distinguished by greater drought resistance. Best of all are interrows 70 x 70 cm, 2 plants to a hole in a high-stemmed variety, and 60 x 60 cm, 2 plants

Card : 1/2

CZECHOSLOVAKIA / Cultivated Plants

L-2

Abs Jour : Ref Zhur - Biol., No 6, March 1957, No 22681

Abstract : to a hole in low-stemmed varieties. Such interrows permit the application of mechanization in cultivating and shortening of periods for care, which also helps increase yield.

Card : 2/2

Fojtik K.

CZECHOSLOVAKIA / Cultivated Plants.

L-2

Abs Jour : Ref Zhur - Biol., No 6, March 1957, No 22703

Author : Fojtik

Inst : Not given

Title : Corn Planting -- Unremitting Attention During the Whole Year.

Orig Pub : Nas ohov, 1956, No 9, 267-269

Abstract : No abstract

C<sub>a</sub>rd : 1/1

FOJTIK, L.

Use of electric gauges for the measurement of strains in  
agricultural machinery. P. 141 SBORNIK RADA MECHANISACE  
A ELEKTROTECHNICKA ZEMEDELSTAVE A LESNICTVI. Praha. Vol. 28,  
no. 2/3, Sept. 1955

SOURCE: East European Accessions List (EEAL) Library of Congress  
Vol. 5, no. 7, July 1956

FOJTIK, L,

Use of electric resistance deformation recorders to determine the slip characteristics of tractor tires. Excerpts from some reports on the scientific research of the Institute for Research on the Mechanization and Electrification of the Czechoslovak Academy of Agricultural Science at Rapy.

(SBORNIK RADA MECHANISACE A ELEKTRIFIKACE ZEMEDELSTVI) Vol. 30, no. 5, Oct. 1957, Praha, Czechoslovakia

S0: Monthly Index of East European Accessions (EEAI) LC, Vol. 7, No. 3, March 1958

FOJTIK, L.

AGRICULTURE

PERIODICAL: ZEMEDELSKE STROJE, VOL. 2, no. 3, Mar. 1959

Fojtik, L. Electric equipment for the intergration of mechanical values.  
p. 24.

Monthly List of East European Accessions (EEAI), LC, Vol. 8, no. 5,  
May 1959, Unclass.

KRTIL, J.; FOJTIK, M.; KYRS, M.

Extraction of the cesiumtetraphenylborate from aqueous solutions by nitrobenzene. Coll Cz Chem 27 no.9:2069-2078 S '62.

1. Institut für Kernforschung, Tschechoslowakische Akademie der Wissenschaften, Rez bei Prag.

KOPRDA, V.; FOJTIK, M.

Effect of heat on chromium and maganese separation by ion exchangers.  
Chem zvesti 19 no.4:294-298 '65.

1. Institute of Industrial Hygiene and Occupational Diseases,  
Bratislava. Submitted August 29, 1964.

FOJTIK, Martin MUDr

Maxillary cancer; with report of a case. Cesk.stomat. no.4-5  
154-160 J1 '55.

1. 2 II. stomatologicke kliniky KU v Praze, predn.prof. dr  
Frant. Neuwirt.

(MAXILLARY SINUS, neoplasms,  
case report)

FOJTIK, Martin

Surgical treatment in affections of the trigeminal nerve. Acta univ. carol. [med.] 7 no.5:655-658 '61.

1. Oddleni stomatologicke chirurgicke katedry lekarske fakulty  
hygienicke, vedouci prof. MUDr. RNDr. F. Skaloud.  
(TRIGEMINAL NEURALGIA surgery)

2

KRTIL, J; FOJTÍK, M; KYRŠ, M.

Czechoslovakia

Institute for Nuclear Investigation, Czechoslovak  
Academy of Sciences -- Rež by Prague - (for all)

Prague, Collection of Czechoslovak Chemical  
Communications, No 9, 1962, pp 2069-2077

"Extraction of Cesiumtetrphenolborate from a Water  
Solution with Nitrobenzol."

L 10824-66 EWP(t)/EWP(b) IJP(c) JG/JD

ACC NR: AF6004444

SOURCE CODE: CZ/0043/65/000/004/0294/0298

AUTHOR: Koprda, V.; Fojtik, M.--Foytik, M.

ORG: Institute of Industrial Hygiene and Occupational Diseases, Bratislava  
(Ustav hygieny prace a chorob z povolania)

TITLE: Effect of temperature on separation of Cr and Mn by ion exchangers

SOURCE: Chemické zvesti, no. 4, 1965, 294-298

TOPIC TAGS: chromium, manganese, intermolecular complex, chemical separation, ion exchange resin, radioisotope, chemical labelling, radiation chemistry

ABSTRACT:

Separation of Cr and Mn in the form of chloro complexes in 10.5 M HCl at elevated temperatures using anion exchange resin Dowex 2x8 (100-200 mesh) is described. The method was evaluated by using radioisotopes Cr<sup>51</sup> and Mn<sup>54</sup>. The separation coefficient equals 1 at room temperature and increases with increasing temperature. At 70°C it is nearly 4. Above 55°C quantitative separation of Cr and Mn is possible. Orig. art. has: 5 figures. [JPRS]

SUB CODE: 07 / SUBM DATE: 29Aug64 / OTH REF: 010

Card 1/1

L 41668-66 EWP(e)/EWP(t)/ETI IJP(c) RM/JG/JD

ACC NR: AP6031197

SOURCE CODE: CZ/0043/66/000/003/0180/0187

AUTHOR: Fojtik, Marian--Foytik, M. (Engineer); Koprda, Vasil (Engineer) 22

ORG: Research Institute of Industrial Hygiene and Occupational Diseases,  
Bratislava (Vyskumny ustav hygieny prace a chorob z povolania) B

TITLE: Chromatographic separation and determination of <sup>51</sup>Cr sup 51, Mn sup 54,  
Co sup 60 and Fe sup 59

SOURCE: Chemicke zvesti, no. 3, 1966, 180-187

TOPIC TAGS: paper chromatography, quantitative analysis

ABSTRACT: The authors developed a method of paper chromatography using Whatman I. chromatographic paper and an acetone- 7 N HCl (90:10) solvent system. A separation with the following R<sub>f</sub> values was attained: Cr 0.03, Mn 0.32, Co 0.69, and Fe 0.96. The R<sub>f</sub> values are independent from the amount of the isotopic carrier in a wide range. Quantitative determination was made by planimetric evaluation of the radiographic records. Determination threshold of the method is 1.70nCi for Cr<sup>51</sup>, 0.36nCi for Mn<sup>54</sup>, 0.12nCi for Co<sup>60</sup>, and 0.18 nCi for Fe<sup>59</sup>. The method is suitable for the determination of the metals in biological materials. Orig. art. has: 5 figures, 2 formulas and 3 tables. [Based on authors' Eng. abst.] [JPRS: 36,002]

SUB CODE: 07 / SUBM DATE: 24Jun65 / ORIG REF: 003 / SOV REF: 001  
OTH REF: 004

Card 1/1 ps

09/11 2630

FOJTIK, S., inz.

Solution of supplementary irrigation. Vodni hosp 1/4 no.5:  
3 of cover '64.

1. Slovak National Council.

FOJTIK, Z.; KRALIK, Jirí, inz.

Contribution to the origin of tonsteins from the viewpoint of the  
comparison of Carboniferous (Upper Silesia) and Tertiary (Handlova)  
occurrences. Sbor VSB Ostrava 10: 1/2:35-45 '64.

1. Submitted December 23, 1963.

BENES, Konrad, prof. RNDr.; FOJTÍK, Z.; KRALÍK, Jiri, inz.

Preliminary report on the discovery of an increased boron  
content in Handlova coal. Sbor VSB Ostrava 10 n. 1/2:201-204  
164.

1. Submitted December 20, 1963.

POJTIK, T.

Secondary ore mineralization in the marker of Ostrava under-  
surf in the northern part of Ostrava-Karviná coalfield.  
Sb. VSB Ostrava 10 no. 51/2:223-227, '64.

1. Submitted January 15, 1964.

CZECHOSLOVAKIA

KOLIANDR, P.; SOVA, Z.; WOJTIKOVA, A.; Chair of Physiology of Domestic Animals, College of Agriculture (Katedra Fysiologie Hospodarskych Zvirat, VSZ), Prague.

"On the Determination of Oblique Sedimentation of Erythrocytes of Cattle in Test Tubes."

Prague, Ceskoslovenska Fysiologie, Vol 15, No 5, Sep 66, p 380

Abstract: Erythrocyte sedimentation of cattle is very slow; the authors describe their method of oblique sedimentation, which allows reading the sedimentation values after 20 and 60 minutes, and evaluating these by means of a comparative chart. The method was verified on samples taken from 658 head of cattle. The residue in the test tube may be used for the determination of hematocrits. No references. Submitted at 3 Days of Physiology of Domestic Animals at Liblice, 9 Dec 65.

1/1

- 86 -

FOJTIKOVA, O.  
LEJSEK, L.

Possibilities of utilizing the Krupp-Renn processed slag in the cement industry. p. 158.

STAVIVO. (Ministerstvo stavebnictvi) Praha, Czechoslovakia, Vol. 37, no. 5, May 1959.

Monthly list of East European Accessions (EEAI), LC, Vol. 8, no. 7, July 1959  
Uncla.

PARIZEK, Z.; FOJTU, E.; NEMCOVA, B.

Contribution to more detailed care of children in elementary schools and on improved cooperation with physicians caring for adolescents and regional committees for social welfare. Cesk. pediat. 18 no.6:550-557 Je '63.

1. Oddelení péče o zenu a dite KUNZ v Ostrave, vedoucí MUDr. Z. Parizek.

(SCHOOL HEALTH) (SOCIAL WELFARE) (PHYSICIANS)

FOJTU, Miloslav, MUDr

Progressive bullous pulmonary emphysema. Cas.lek.cesk. 91 no.30:  
908-911 1 Aug 52.

1. Z roentgenologickeho oddeleni stat. oblastni nemocnice v Uh.  
Hradisti. Prednosta: prim MUDr Emilian Sanda.

(EMPHYSEMA, PULMONARY,  
progr. bullous)

FOJTU, M.

Suppurative inflammation of the biliary tract and liver abscess. Cesk. rentgen. 18 no.3:145-150 My'64

Suitability of combined biliography of the biliary tract with irrigography. Ibid.:169-173

1. Ustredni rentgenologicke oddeleni nemocnice v Kyjove;  
vedouci: MUDr. M. Fojtu.

\*

PLUBENKA-BIEHA, Janina; FLUK-ZAJENKA, Aleksandra

Blue sclera syndrome. (Otolaryng. pol. 18 no.3:409-411 '64

1. Z Kliniki Otolaryngologicznej Akademii Medycznej w Poznaniu  
(Kierownik Kliniki i prof. dr. A. Zakrzewski).

STOJALOWSKA, Katarzyna; Fojudska, Janina

Cases of intracranial complications. Otolar. polska 8 no.2:  
151-158 1954.

1. Z Kliniki Otolaryngologicznej Akademii Medycznej w Poznaniu.  
Kierownik: prof. dr. A. Zakrzewski.  
(OTITIS MEDIA, complications,  
brain dis.)  
(BRAIN, in various diseases,  
otitis media)

FOJUDZKA, J.

A case of agranulocytosis observed during the past 10 years. Otolaryng.  
pol. 16 no.4:671-677 '62.

1. Z Kliniki Otolaryngologicznej AM w Poznaniu Kierownik Kliniki: prof.  
dr A. Zakrzewski.

(AGRANULOCYTOSIS)

POJUDZKI, E; GIERMLOWA, H; JONSCHER, K; SKALMOWSKI, T.

Treatment of epidemic infantile paralysis in the acute stage.  
Polski tygod. lek. 6 no.49-50:1573-1574 10 Dec 1951.(CLML 22:2)

1. Of the Pediatric Clinic (Director--Prof. K. Jonscher, M. D.)  
of Poznan Medical Academy and of City Pediatric Hospital (Director  
--M. Szenic, M. D.) in Poznan.

JONSCHER, K.; FOJUDZKI, E.; NOWAK, S.; SZCZEPSKI, O.

First attempt to treat tuberculosis with isonicotinic acid hydrazide.  
Przegl. lek., Krakow 8 no. 10:289-293 1952. (GLML 23:5)

1. Of the Pediatric Clinic (Head--Prof. K. Jonscher, M.D.) of Poznan  
Medical Academy.

FOJUDZKI, E.; KOZLOWSKA, A.; SZCZEPISKI, O.

Effect of intravenously administered insulin on the cerebrospinal  
fluid sugar level in children treated by streptomycin. *Pediat.*  
*polaka* 27 no. 1:35-41 Jan 1952. (CLML 22:4)

1. Of the Pediatric Clinic (Head--Prof. K. Jonscher, M. D.) of Pos-  
nan Medical Academy.

1. DOBKOVA, Maria

DOBKOWA, Maria; FOJUDZKI, Edmund

Studies on the effect of aureomycin on experimental diphtheria.  
Pediat pol 29 no.1:45-51 Ja '54. (REAL 3:8)

1. Z Zakladu Mikrobiologii Lekarskiej Akademii Medycznej w  
Poznaniu, Kierownik: prof. dr med. J. Adamski i z Kliniki  
Pediatricznej Akademii Medycznej w Poznaniu, Kierownik: prof.  
dr med. K. Jonscher. (Otrzymano: 12.X.1953)

(DIPHTHERIA, experimental,  
\*eff. of chlortetracycline)  
(CHLORTETRACYCLINE, effects,  
\*on exper. diphtheria)

DOBEK, Maria, FOJUDZKI, Edmund, WOJCIAK, Tadeusz

Effect of storage conditions on activity of aureomycin solutions used  
for intravenous injections. Ped.polska 33 no.3:315-325 Mar 58

1. Z Zakladu Mikrobiologii Lekarskiej A.M. w Poznaniu Kierownik:  
prof. dr med. J. Adamski Z I Kliniki Chorob Dzieciacych A.M. w Poznaniu  
Kierownik: prof. dr med. T. Rafinski Z Zakladu Farmakologii A.M.  
w Poznaniu Kierownik: prof. dr med. J. Dadlez. Adres: Poznan, ul.  
Magdaleny 14, Klin. Chorob Dzieciacych A.M.

(CHLOROTRACYCLINE, admin.

intravenous, eff. of storage conditions on activity  
of solutions (Pol))

KOZLOWSKA, F.; CHODURA, L.; KOSINSKA, M.; RADWANSKA, U.; FOJUDZKI, M.

Diagnostic value of blood iron & copper determination in mechanical & parenchymatous jaundice. Polski tygod. lek. 14 no.14:641-646 6 Apr 59.

1. (Z I Kliniki Chorob Wewnętrznych A.M. w Poznaniu; kierownik; prof. dr Stefan Kwasniewski; z Oddziału Zakaznego Szpitala Miejskiego w Poznaniu; ordynator: dr med. A. Zahradnik; z Kliniki Chorob Dziecięcych A. M. w Poznaniu; kierownik: prof. Dr T. Rafinski). Poznan, ul. Długa 1/2. 1 Klinika Chorob Wewnętrznych A.M.

(JAUNDICE, OBSTRUCTIVE, blood in  
copper & iron levels, diag. value (Pol))

(JAUNDICE, blood in  
copper & iron, diag. value in parenchymatous jaundice (Pol))

(COPPER, in blood  
diag. value in obstruct. & parenchymatous jaundice (Pol))

(IRON, in blood  
same)

NOWAK, Stanislaw; FOJUDZKI, Edmund

Studies on vitamins A and B1 in tuberculosis in children. Gruzlica  
28 no.6:439-444 Je '60.

1. Z I Kliniki Chorob Dzieci A.M. w Poznaniu Kierownik: prof.  
dr T.Rafinski.

(TUBERCULOSIS in inf & child)  
(VITAMIN A metab)  
(VITAMIN B1 metab)

"APPROVED FOR RELEASE: 08/23/2000

CIA-RDP86-00513R000413410010-7

APPROVED FOR RELEASE: 08/23/2000

CIA-RDP86-00513R000413410010-7"

USSR, Physics - Luminescence

*Fok, M. V.*

Card 1/1

Pub 146-24/25

Author : Alentsev, M. N.; Antonov-Romanovskiy, V. V.; Stepanov, B. I.; Fok, M. V.

Title : Yield of resonance fluorescence of atoms

Periodical : Zhur. eksp. i teor. fiz. 28, 253-254, February 1955

Abstract : B. I. Stepanov (DAN SSSR, 99, 971, 1954) studied the statistical interaction of radiation and system consisting of atoms possessing two energy levels, and showed that the radiation output varies in dependence upon the density of the exciting radiation (this conclusion refers to the total radiation). The authors apply the proposed method to the calculation of the luminescence output of a similar system, e.g. the resonance fluorescence of atoms. They obtain an expression for the quantum output of fluorescence.

Institution: Physics Institute im. P. N. Lebedev, Academy of Sciences USSR  
Physics Institute, Academy of Sciences Belorussian SSR

Submitted : November 25, 1954

Fok, M.V.

USSR/Optics - Physical Optics.

K-5

Abs Jour : Referat Zhur - Fizika, No 3, 1957, 7748

Author : Antonov - Romanovskiy, V.V., Stepanov, B.I., Fok, M.V.,  
Khamalyuk, A.P.

Inst : Physics Institute, Academy of Sciences, USSR., Physico-  
Technical Institute of the Academy of Sciences of the  
Belorussian.

Title : Luminescence Yield From a System with Three Energy Levels

Orig Pub : Dokl. AN SSSR, 1955, 105, No 1, 50-53

Abstract : The luminescence yield of a system with three energy  
levels is calculated and it permits resolving the fun-  
damental problem of whether the value of the energy yield  
 $\Phi$  can exceed unity. Attempts found in the literature  
of a thermodynamic proof of the impossibility of  $\Phi > 1$   
are not satisfactory. The energy yield of luminescence  
of a system with three levels (Pringsheim model) (Pring-  
sheim, P., Journal of Physics, 1949, 10, 495) is calcula-  
ted

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D-419421

APPROVED FOR RELEASE: 08/23/2000

CIA-RDP86-00513R000413410010-7

USSR/Optics - Physical Optics

Abs Jour : Ref Zhur - Fizika, No 5, 1957, 12928

external extinction does not explain these laws, for it  
gives an exponential attenuation (mono-molecular) extinc-  
tion and a dependence of I on E in the form  $I \propto E^2$ . The  
stationary brightness and the extinction are calculated  
for the case, when the holes in the valent zone have a  
greater probability of returning to the activator level,  
than of recombining with the localized electrons. A  
formula is obtained to explain the experimentally obser-  
ved dependence of I on E in the hyperbolic extinctions.  
On the basis of the same calculation, an explanation is  
given for the extinguishing action of Co and Ni and it  
is shown, that if the extinction is not too strong, when  
the yield is reduced by merely a factor of several times,  
the dependence of I on E remains linear.

Card 2/2

Fok, M.V.

USSR/Optics - Physical Optics.

K-5

Abs Jour : Referat Zhur - Fizika, No 3, 1957, 7748

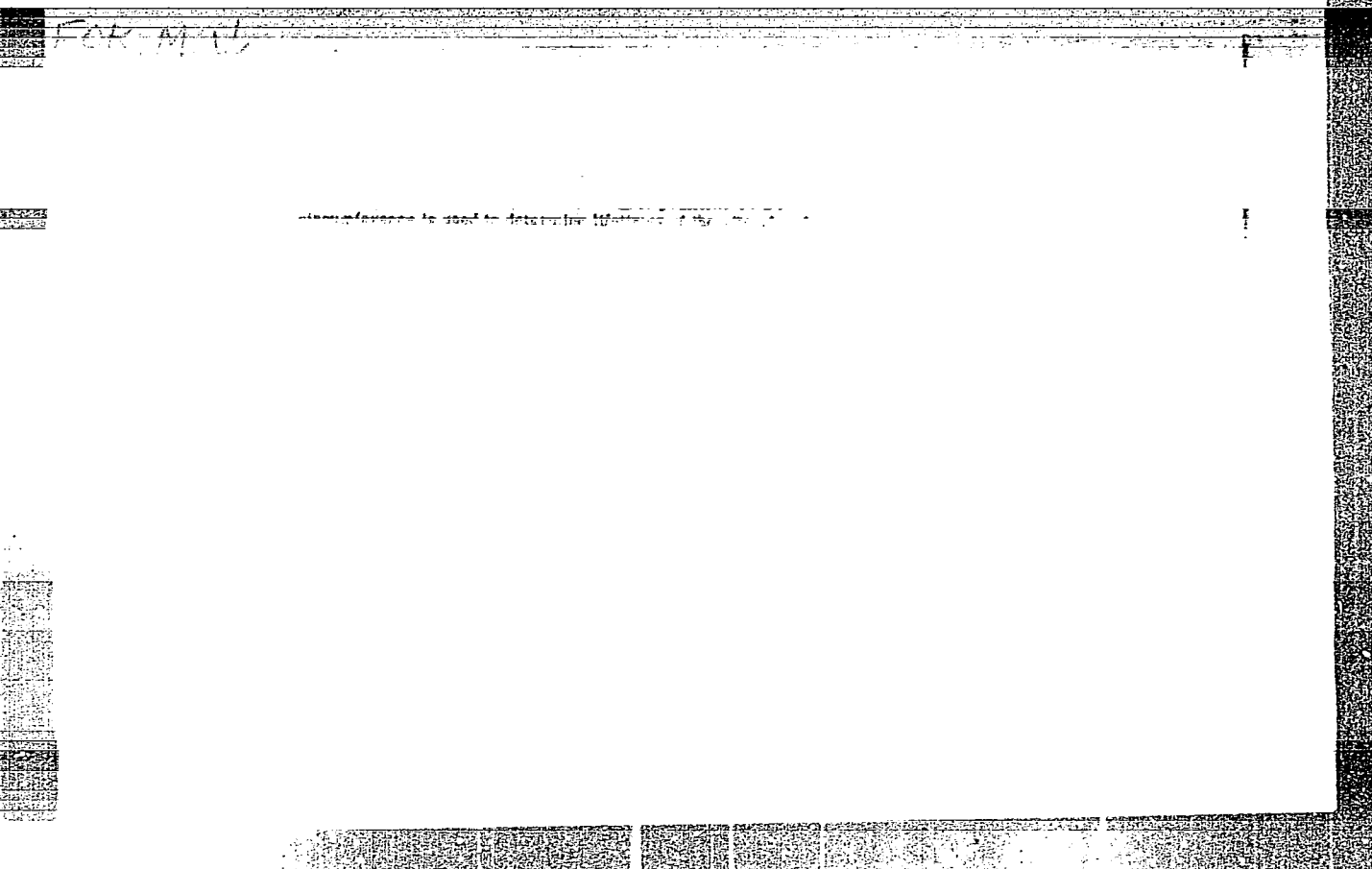
in detail with allowance for the available thermal radiation in the same way as in the workd listed for a system with two energy levels (Referat Zhur Fizika, 1956, 17898, 23129). A rarefied thin layer of luminescent gas is considered, to make it possible to disregard the reverse reaction of the luminescence on the electron transitions of the radiating systems. It is shown that in the anti-Stokes region  $\eta$  can be greater than unity and that this does not contradict the second law of thermodynamics. The energy of a luminescent body together with the excitation energy is transferred to the surrounding medium, the temperature of which is lower than the temperature of the exciting body. This, as indicated by Pringsheim, is analogous to the action of refrigerator. It is shown that it is possible to have "negative" luminescence, i.e., not an excess above the background of thermal radiation, but a deficiency of radiation, having a finite duration.

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"APPROVED FOR RELEASE: 08/23/2000

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APPROVED FOR RELEASE: 08/23/2000

CIA-RDP86-00513R000413410010-7"

Fok, M.V.

51-4-10/25

AUTHORS: Manenkov, A.A., Prokhorov, A.M., Trapeznikova, Z.A.  
and Fok, M.V.

TITLE: Application of the paramagnetic resonance method to <sup>the</sup> study  
of the activator state in phosphors. (Primeneniye metoda  
paramagnitnogo rezonansa dlya issledovaniya sostoyaniya  
aktivatora v fosforakh.)

PERIODICAL: "Optika i Spektroskopiya" (Optics and Spectroscopy),  
1957, Vol.2, No.4, pp.470-474 (U.S.S.R.)

ABSTRACT: This paper was presented at the 5th Conference on  
Luminescence in Tartu, June, 1956. From the nature (or  
absence) of the paramagnetic resonance spectrum of a crystal  
it is possible to deduce the valency state (and changes of  
that valency state) of paramagnetic ions in crystal. This is  
more difficult for powders when the paramagnetic absorption  
lines may be very broad due to relaxation or anisotropy.  
These difficulties are particularly pronounced for the case  
of ions whose paramagnetism is due to unpaired d-electrons.  
Results are reported for powdered SrS:Eu, SrS:Gd and for  
artificial CaF<sub>2</sub>:Eu monocrystals. Measurements were carried  
out at 9340 Mc/s and at room temperature. The apparatus used  
is described in Radiotekhnika i Elektronika, Vol.1, 469,  
1956. Some of the present results were reported earlier  
(A.A.Manenkov and A.M.Prokhorov, Doklady Akad. Nauk SSSR,

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51-4-10/25

Application of the paramagnetic resonance method to study of the activator state in phosphors. (Cont.)

Vol.107, 402, 1956). In  $\text{SrS:Eu}$  and  $\text{CaF}_2\text{:Eu}$  only the  $\text{Eu}^{2+}$  ion ( $8S_{7/2}$  state) is effective;  $\text{Eu}^{3+}$  is non-magnetic. For  $\text{Eu}^{2+}$  the electron spin is  $7/2$  and therefore 7 electron transitions are possible due to crystal electric field splitting. In  $\text{SrS:Eu}$  only one of these transitions  $M=1/2 \leftrightarrow -1/2$  was found; the others could not be observed due to anisotropic broadening. This one transition was split into 12 hyperfine structure (h.f.s.) components by the interaction of the nuclear spins of the two Eu isotopes:  $\text{Eu}^{151}$  and  $\text{Eu}^{153}$  with the electron spin. The  $\text{SrS:Eu}$  paramagnetic spectrum confirms that the europium activator is in the  $\text{Eu}^{2+}$  state. In the fluorite ( $\text{CaF}_2\text{:Eu}$ ) spectrum all 7 electron transitions, each with 12 h.f.s. components, were observed. From the h.f.s. of the paramagnetic spectra of  $\text{SrS:Eu}$  and  $\text{CaF}_2\text{:Eu}$  the ratio of the magnetic moments of the  $\text{Eu}^{151}$  and  $\text{Eu}^{153}$  nuclei was found to be  $\mu_{151}/\mu_{153} = +2.24 \pm 0.03$  nuclear magnetons. Frequency of the absorption lines for  $\text{CaF}_2\text{:Eu}$  monocrystals was found to depend strongly on the crystal orientation with respect to the applied constant magnetic field. This indicates that the crystal electric-field

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2 of which are Slavic. There are 3 figures and 4 references, ...

SUBMITTED: November 9, 1956.

AVAILABLE: Library of Congress

Card 3/3

APPROVED FOR RELEASE: 08/23/2000

CIA-RDP86-00513R000413410010-

AUTHOR: Fok, M.V.

51-4-11/25

TITLE: On the recombination interaction of blue and green luminescence centres in the ZnS:Cu phosphors. (O rekombinatsionnom vzaimodeystvii tsentrov goluboy i zelenoy lyuminestsentsii v fosfore ZnS-Cu)

PERIODICAL: "Optika i Spektroskopiya" (Optics and spectroscopy) 1957, Vol.2, No.4, pp.475-479 (U.S.S.R.)

ABSTRACT: This work was carried out with the help of L.A.Vinokurov. ZnS:Cu has two luminescent bands: green (due to Cu) with an emission maximum at 530 m $\mu$  and an excitation maximum at 400-410 m $\mu$ , and blue with emission and excitation maxima at 470 m $\mu$  and 330-340 m $\mu$  respectively. These luminescent bands behave differently: the blue band decays much faster than the green one, and at room temperature the steady-state brightness of the blue band depends on the excitation intensity E more than linearly, while that of the green one is proportional to E or less than linear. This paper presents calculations and experimental results for ZnS:Cu ( $10^{-6}$  Cu) samples prepared at 1100°C. An energy band scheme is given in a figure. Theoretical calculations are carried out under the following assumptions: (1) electron and hole densities in the valence band are small; (2) for electrons the probability of recapture is much smaller than the probability of

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51-4-11/25

On the recombination interaction of blue and green luminescence centres in the ZnS:Cu phosphors. (Cont.)

recombination with holes; (3) only a small proportion of the luminescence centres of both types is in the ionized state. The calculations yield the following results. For absorption of exciting light by the blue centres, the steady-state brightness of the blue centres is  $I_b \sim E^{3/2}$  and of the green centres  $I_g \sim E$  (both for low values of  $E$ ). At higher values of  $E$  we find  $I_b \sim E$  and  $I_g \sim E^{1/2}$ . These formulae are in good semiquantitative agreement with experimental results for the 366 m excitation. For excitation in the absorption band of the green centres (436 m  $\mu$ ) theory gives  $I_g \sim E$  for all values of  $E$ , and  $I_b \sim E^n$ , where  $n = 1$  for lower values of  $E$  and  $n < 1$  for higher  $E$ . This could not be tested experimentally because of mixing of the exciting light with the blue luminescence. Theoretical consideration of decay shows that on excitation of the blue centres, the blue emission decays at first faster than the green but after a time both emissions decay at about the same (hyperbolic) rate. On excitation of the green centres both emissions decay at almost the same rate. Experiments using 366 and 436 m  $\mu$  excitation respectively confirm theoretical predictions. From experiments at liquid-air temperatures it

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51-4-11/25

On the recombination interaction of blue and green luminescence centres in the ZnS:Cu phosphors. (Cont.)

was found that 436 m $\mu$  excitation produced blue luminescence of intensity similar to that at room temperature. This is explained by liberation of holes by light (the usual thermal liberation mechanism is not effective at low temperatures) which then ionize the blue centres. The process of luminescence and ionization of the blue centres by holes is called "anti-Stokes sensitization". There are three figures and seven references, four of which are Slavic.

ASSOCIATION: Physics Institute, Academy of Sciences of the U.S.S.R.  
(Fizicheskii Institut AN SSSR)

SUBMITTED: August 30, 1956.

AVAILABLE: Library of Congress

Card 3/3

FOR, M.V.

ANTONOV-ROMANOVSKIY, V.V.; FOR, M.V.

On M.I. Adirovich's "On the theory of luminescence of crystals."

Opt. i spektr. 3 no.4:407-408 O '57.

(MIRA 10:11)

1. Fizicheskiy institut im. P. N. Lebedeva AN SSSR.

(Luminescence)

(Crystal--Optical properties)

(Adirovich, M.I.)

SUBJECT: USSR/Luminescence

48-4-9/48

AUTHOR: Pok M.V.

TITLE: On afterglow of  $\text{Eu}^{3+}$ -ions in Phosphors Containing Thorium Oxide (O posle svechenii iona  $\text{Eu}^{3+}$  v fosforakh na osnove okisi toriya)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, 1957, Vol 21, #4, pp 505-506 (USSR)

ABSTRACT: Phosphors activated by tri-valence rare earth metal elements show line emission spectra due to forbidden electron transitions in the 4f-shell. In order to interpret these spectra, it is important to know the life-times  $\tau$  of excitation states corresponding to each line.

Spectra of the phosphors  $\text{ThO}_2\text{-Eu}$  and  $\text{Th}(\text{SO}_4)_2\text{ThO}_2\text{-Eu}$  were investigated to find out the influence of the finite duration of an excited state on the afterglow of individual  $\text{Eu}^{3+}$ -lines. A specially designed spark phosphoroscope made it possible to bring about pulse excitations with a duration of  $\sim 10^{-5}$  sec and observe the afterglow from  $3 \times 10^{-4}$  to  $4 \times 10^{-2}$  sec after excitation cessation.

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TITLE:

48-4-9/48

On afterglow of  $\text{Eu}^{3+}$ -ions in Phosphors Containing Thorium  
Oxide (O posle svechenii iona  $\text{Eu}^{3+}$  v fosforakh na osnove  
okisi toriya)

It was found out that individual phosphor lines fade in a different way. The brightness of some lines not only does not reduce after excitation cessation, but even increases during some time. This anomaly manifests itself especially strongly with the line of  $590 \text{ m}\mu$ , the brightness of which rises by almost 50% during  $2 \times 10^{-3} \text{ sec}$  after excitation cessation, and then begins a rather sharp fall.

This phenomenon can be used for determination of the  $\tau$ -values for each line by examination afterglow curves. The report was followed by a discussion. No references are cited in the article.

INSTITUTION: Physical Institute im. Lebedev of the USSR Academy of Sciences.

PRESENTED BY:

SUBMITTED: No date indicated.

AVAILABLE: At the Library of Congress.

Card 2/2

Fok, M.V.

48-4-22/48

SUBJECT: USSR/Luminescence

AUTHORS: Vinokurov L.A. and Fok M.V.

TITLE: On the Quenching of ZnS-Cu, Co and ZnS-Cu, Ni-Phosphors by Infra-Red Light (O tyshenii fosforov ZnS-Cu, Co i ZnS-Cu, Ni infrakrasnym svetom)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, 1957, Vol 21, #4, p 538 (USSR)

ABSTRACT: Infra-red light gives rise to flashes and quenching of ZnS-Cu, Co and ZnS-Cu, Ni phosphors. It was discovered that at the constant intensity of infra-red light the phosphor brightness I depends on excitation intensity E according to the law:

$$I \approx E^{1/2}$$

The action of infra-red light in afterglow leads to the second-order hyperbola decay, instead of an exponential law as in the conventional scheme.

The stationary brightness and decay of the phosphors were calculated for a case when holes in the valence zone have a greater probability to return to luminescent centers than to recombine with localized electrons.

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48-4-22/48  
TITLE: On the Quenching of ZnS-Cu, Co- and ZnS-Cu, Ni-Phosphors by  
Infra-Red Light (O tyshenii fosforov ZnS-Cu, Co i ZnS-Cu,  
Ni infrakrasnym svetom)

The Co and Ni effects as quenching agents was explained on the  
basis of these calculations.

The report was followed by a short discussion.  
No references are cited.

INSTITUTION: Physical Institute im. Lebedev of the USSR Academy of Sciences

PRESENTED BY:

SUBMITTED: No date indicated

AVAILABLE: At the Library of Congress.

Card 2/2

FOR TV

48-5-53/56

SUBJECT: USSR/Luminescence

AUTHORS: Manenkov A.A., Prokhorov A.M., Trapeznikova Z.A., and Fok M.V.

TITLE: Application of Paramagnetic Resonance Method for Investigation of the Activator State in Phosphors (Primeneniye metoda paramagnitnogo rezonansa dlya issledovaniya sostoyaniya aktivatora v fosforakh)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, 1957, Vol 21, #5, p 779 (USSR)

ABSTRACT: The paramagnetic resonance method was applied to determine the valence state of an activator in crystallophosphors and to detect the changes of valence during the excitation of phosphors.

The paramagnetic resonance was investigated in the phosphors SrS-Eu; CaF<sub>2</sub>-Eu; SrS-Gd and SrS-Tb at the room temperature by means of a superheterodyne radiospectroscope. It was established that Eu in phosphors is in bivalent state (Eu<sup>2+</sup>), and Gd and Tb are in the trivalent states (Gd<sup>3+</sup> and Tb<sup>3+</sup>).

Card 1/2 The ratio of nuclear magnetic moments of Eu<sup>151</sup> and Eu<sup>153</sup> nuclei was determined to be  $2.24 \pm 0.03$  by observing the

48-5-53/56

TITLE:

Application of Paramagnetic Resonance Method for Investigation of the Activator State in Phosphors (Primeneniye metoda paramagnitnogo rezonansa dlya issledovaniya sostoyaniya aktivatora v fosforakh)

superfine structure of  $\text{Eu}^{2+}$  and  $\text{Gd}^{3+}$  spectra. The values of nuclear magnetic momenta of  $\text{Gd}^{155}$  and  $\text{Gd}^{157}$  were estimated to be approximately equal to 0.2 of nuclear magnetons.

One Russian reference is cited.

INSTITUTION: Physical Institute im. Lebedev of the USSR Academy of Sciences.

PRESENTED BY:

SUBMITTED: No date indicated

AVAILABLE: At the Library of Congress.

Card 2/2

FOR M.V.

VINOKUROV, L.A.; FOX, M.V.

Effect of external quenching on the recombination interaction  
of centers of blue and green luminescence in ZnS-Cu phosphors.  
Inzh.-fiz.sbur. no.2:58-63 F '58. (MIRA 13:1)

1. Fizicheskiy institut im. P.N.Lobedeva AN SSSR.  
(Luminescence) (Phosphors)

Fok, M. V.

51-4 -1-24/26

AUTHORS: Vinokurov, L. A. and Fok, M. V.

TITLE: Effect of Temperature on Recombinational Interaction of the Blue and Green Luminescence Centres in ZnS-Cu Phosphor. (Vliyaniye temperatury na rekombinatsionnoye vzaimodeystviye tsentrov goluboy i zelenoy lyumines-tsentsii v fosfore ZnS-Cu.)

PERIODICAL: Optika i Spektroskopiya, 1958, Vol.IV, Nr.1, pp. 118-121. (USSR).

ABSTRACT: Fok showed that (Ref.1) interaction of the blue and green luminescent centre is due to exchange of holes between them on excitation of the phosphor. Fok also deduced formulae which give the steady-state brightness of blue and green luminescence as a function of the excitation intensity. These formulae were found for the case when the exciting light is absorbed by centres of one kind only. If the exciting light is absorbed by Card 1/4 the blue centres, then at  $C \ll 1$  the Fok formulae show

51-4 -1-24/26

Effect of Temperature on Recombinational Interaction of the Blue and Green Luminescence Centres in ZnS-Cu Phosphor.

that in a wide range of excitation intensities brightness of the blue luminescence ( $I'$ ) increases superlinearly with the excitation intensity  $E$  (up to  $I' \sim E^{3/2}$ ). At the same time the green luminescence brightness  $I''$  increases either linearly or sublinearly with the excitation intensity.  $C = \partial'w''/\partial''w'$ , where  $\partial'$  and  $\partial''$  are probabilities of capture of holes by the blue and green luminescent centres respectively,  $w'$  and  $w''$  are the probabilities of liberation of holes by the same centres. From the Fok formulae it follows that on increase of temperature  $I'(E)$  may become linear. To verify this the authors used ZnS-Cu phosphor with  $10^{-7}$  g/g of the activator. The results of measurements of  $I'(E)$  are given in

Card 2/4 Fig.2, a. This figure shows that the blue luminescence

51-4.-1-24/26  
Effect of Temperature on Recombinational Interaction of the Blue and Green Luminescence Centres in ZnS-Cu Phosphor.

does indeed approach a linear dependence on the excitation intensity with increase of temperature. This in fact cannot be regarded as sufficient support for Fok's theory. The green luminescent brightness becomes superlinear in its dependence on the excitation intensity, contradicting Fok's theory (see Fig.2, b and Fig.3). This latter effect is due to excitation with 366 mμ which is absorbed by both blue and green centres. The authors solve kinetic equations for the case of absorption of the exciting light by centres of two kinds. The formulae then obtained gave better agreement with experiment in respect of non-linearity of  $I''(E)$ . The agreement between theory and experiment is

Card 3/4 still not completely satisfactory since the theory does

51-4-1-24/26  
Effect of Temperature on Recombinational Interaction of the Blue  
and Green Luminescence Centres in ZnS-Cu Phosphor.

not predict the observed region of temperatures where  
the brightness of both the green and blue luminescence  
is a super-linear function of the excitation intensity.  
This behaviour is ascribed to external quenching which  
was not taken into account in calculations. There are  
4 figures and 1 Russian reference.

ASSOCIATION: Physics Institute, Academy of Sciences of the USSR  
(Fizicheskiy institut, AN SSSR).

SUBMITTED: April 27, 1957.

AVAILABLE: Library of Congress.

1. Phosphors-Excitation-Luminescence-Theory

Card 4/4

SOV/51-5-2-11/28

AUTHORS: Georgobiani, A.N. and Fok, M.V.

TITLE: Investigation of Relaxational Processes in Electroluminescence  
(Issledovaniye relaksatsionnykh protsessov pri elektroluminesentsii)

PERIODICAL: Optika i Spektroskopiya, 1968, Vol 5, Nr 2, pp 167-171 (USSR)

ABSTRACT: The authors studied relaxational processes in emission by an electroluminescent capacitor in order to elucidate the role of polarization charge in electroluminescence. This polarization charge is produced in separate grains of the phosphor (surrounded by a dielectric) by the action of the external alternating electric field. The magnitude and distribution of the polarization charge depend on the amplitude of the applied field, rate of change of this field and sometimes on previous history of the capacitor. The polarization charge distorts the field in the capacitor and concentrates it in a certain small region. Thus in an electroluminescent capacitor we have two regions: a region of high-field concentration and a field-free region. To study the processes occurring in these two regions the authors made some measurements on capacitors with ZnS-Cu,Al phosphors. All measurements were made using symmetrical trapezoidal pulses of 200 c/s

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SOV/51-5-2-11/26

## Investigation of Relaxational Processes in Electroluminescence

frequency, 300 V amplitude and the pulse-front slope of 1.42 V/ $\mu$ sec. The thickness of the capacitor was 0.2 mm. The authors investigated the form of brightness waves, the ratio between the alternating and constant components of electroluminescence as a function of the form of the trapezoidal pulses, the effect of red and infrared light on the form of brightness waves, and oscillograms of rise curves of electroluminescence. The ZnS-Cu,Al phosphors used had from  $5 \times 10^{-4}$  to  $3 \times 10^{-3}$  g/g of Cu, and from  $3 \times 10^{-4}$  to  $2 \times 10^{-3}$  g/g of Al. The phosphors were prepared at 1100°C in H<sub>2</sub>S or at 1000°C in a mixture of H<sub>2</sub>S and HCl. The following results were obtained. (A) The brightness waves had the form shown in Fig 1 (curves 1). Curves 2 in Fig 1 show the applied trapezoidal voltage pulses. (B) Mean brightness of luminescence depends on the amplitude and frequency of the applied field, and on the slope of the pulse-front (Fig 2). (C) The ratio of the constant and alternating components of electroluminescence depends both on frequency and the slope of the pulse front on the applied field and is practically independent of the field amplitude (Fig 3). (D) De-excitation with long-wavelength light has a stronger effect in phosphors which can store large light-sums and in this case only the constant component of electroluminescence is decreased. In phosphors which store small light-sums red light lowers

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also the alternating component. (E) When the alternating field is switched on the constant and alternating components of electroluminescence grow at different rates (the constant component grows more slowly as shown in Fig 4). The authors give the following tentative explanation for the observed behaviour of ZnS-Cu,Al. The field-free region in the capacitor extends throughout most of the capacitor and the region of high field concentration is near the electrodes. The alternating component of electroluminescence arises from liberation and subsequent recombination of electrons in the high-field region. The constant component of electroluminescence is due to processes affecting holes and electrons, which occur in the field-free region. There are 4 figures and 3 Soviet references.

ASSOCIATION: Fizicheskiy institut im. P.N. Lebedeva, AN SSSR (Physics Institute imeni P.N. Lebedev, Academy of Sciences of the U.S.S.R.)

SUBMITTED: September 26, 1957

Card 3/3      1. Phosphors--Luminescence    2. Electromagnetic waves--Polarization  
                 3. Electromagnetic fields--Applications

AUTHORS: Bukko, Ye.Ye., Vinokurov, L.A. and Fok, M.V.

SOV/51-5-2-12/26

TITLE: The Effect of the Stored Light-Sum on the Brightness of Electroluminescence of the ZnS-Cu,Al Phosphor (Vliyaniye zapasennoy svetosummy na yarkost' elektroluminestentsii fosfora ZnS-Cu,Al)

PERIODICAL: Optika i Spektroskopiya, 1958, Vol 5, Nr 2, pp 172-178 (USSR)

ABSTRACT: The paper gives new experimental data on dependence of the brightness of electroluminescence on the light-sum stored in the phosphor. The authors followed the technique developed at the Luminescence Laboratory of the Physics Institute of the Academy of Sciences of the U.S.S.R. by Z.A. Trapeznikova and R.M. Medvedeva, who prepared phosphors which store large light-sums when excited with electric fields. These phosphors were prepared in an atmosphere of  $H_2S$  and  $HCl$ . Electroluminescent capacitors were prepared from such phosphors by pouring out a layer of ZnS-Cu,Al mixed with melamideformaldehyde and alkyd "Rezyl" (trade name) resins onto conducting glass plates. Such a layer was dried and polymerized and a film of aluminium was deposited in vacuum to serve as the second electrode. Measurements were made from  $-195^{\circ}C$  to  $+100^{\circ}C$  using fields of 450 V and 3000 c/s. 366 m $\mu$  mercury line was used as a source of excitation in some of the experiments.

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The results obtained are shown schematically in Fig 1. At room temperature (the upper part of Fig 1) the electroluminescent brightness increases from the moment of switching on the field and in 6-8 min reaches a steady-state (Fig 1, 1a). If, with the field on, the phosphor is irradiated with infrared light, then the brightness falls (Fig 1, 1b). The increase of brightness is accompanied by an increase in the light-sum stored in the phosphor. This was checked by measurement of flash brightness under the action of infrared light (the thick vertical lines in Fig 1 are proportional to such flash brightness). If, with the field on, the phosphor is irradiated with ultraviolet light (366 mμ), then a rise of brightness above the previous steady-state value is obtained (Fig 1, 1v). If, after this new steady state is reached the ultraviolet irradiation ceases, then the brightness falls very slowly to the steady-state value obtained with the field alone (Fig 1, 1g). Decay of phosphorescence (Fig 1, 1e) excited by ultraviolet light without the field (Fig 1, 1d) proceeds faster than the decay of brightness

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produced by the simultaneous action of ultraviolet light and the field. This means that the increase of electroluminescent brightness by the action of ultraviolet light cannot be explained by the additional effect of phosphorescence. The light-sum reaches its maximum value under the action of the field and ultraviolet light. At room temperature, the presence of a stored light-sum increases the electroluminescent brightness irrespective of whether this light sum was stored by means of the field or ultraviolet light. At low temperatures the behaviour of the phosphor is the converse of that observed at room temperature (Fig 1, 2a-e), i.e. the presence of a light-sum in the phosphor lowers the electroluminescent brightness irrespective of whether this light-sum was stored by the action of the electric field of ultraviolet light. The authors discuss the following possible explanation (due to V.V. Antonov-Romanovskiy) for the anomalous behaviour of the ZnS-Cu,Al phosphor at low temperatures. At such temperatures the localized electrons increase the scattering and absorb the energy of free electrons which are moved by the electric field. The mean free path of the free electrons is shortened and

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their energy decreases. This means that the probability of ionization of luminescence centres by the free electrons decreases. As a result the electroluminescent brightness decreases without any marked decrease in the amount of energy absorbed. There are 4 figures and 4 references, 3 of which are Soviet and 1 French.

ASSOCIATION: Fizicheskiy institut im. P.N. Lebedeva, AN SSSR (Physics Institute imeni P.N. Lebedev, Academy of Sciences of the U.S.S.R.)

SUBMITTED: September 26, 1957

Card 4/4    1. Phosphors--Excitation    2. Electromagnetic fields--Applications  
3. Phosphors--Luminescence

BUKKE, Ye.Ye.; VINOKUROV, L.A.; FOK, M.V.

Effect of total accumulated light on the brightness relaxation  
of electroluminescence. Inzh.-fiz.sbur. no.7:113-116 J1 '58.  
(MIRA 11:8)

1.Fizicheskiy institut im. P.N. Lebedeva AN SSSR, Moskva.  
(luminescence)

*FOA, M.V.*

POLAND/Optics - Luminescence

K-6

Abs Jour : Ref Zhur - Fizika, No 4, 1959, No 6768

Author : Fock M.W.

Inst : Physics Institute, Academy of Sciences, USSR, Moscow

Title : External Quenching, Interaction of Activators, and Migration of Holes in ZnS-Cu and ZnS-Cu, Co Phosphors

Orig Pub : Postepy fiz., 1958, 9, No 2, 197-209

Abstract : The calculation is given for a phosphor with two luminescent centers ("green" and "azure") and one electronic local level. Making certain assumptions concerning the probabilities of these transitions, it was possible to obtain results that are in good agreement with the experimental dependence of the intensity of luminescence on the intensity of excitation, the temperature dependences of the luminescence, and the course of quenching of the glow. Infrared extinction is explained on the basis of a simpler model, assuming a considerable probability of secondary capture of the hole by the luminescence centers.

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24(0)

AUTHORS:

Osiko, V. V., Fok, M. V.

SOV/30-58-11 38/48

TITLE:

The Luminescence of Crystalline Phosphors and Its Application  
(Lyuminestsentsiya kristallofosforov i yeye primeneniye)  
All-Union Conference in Moscow (Vsesoyuznoye soveshchaniye v  
Moskve)

PERIODICAL:

Vestnik Akademii nauk SSSR, 1958, Nr 11, pp 121-122 (USSR)

ABSTRACT:

The Seventh Conference was held in Moscow from June 26 to July 3 and had been convened by the Fizicheskiy institut im. P. N. Lebedeva Akademii nauk SSSR i Nauchnyy sovet po lyumines-tsentsii (Institute of Physics imeni P. N. Lebedev of the AS USSR and the Scientific Council for Luminescence). Almost 350 delegates from the Soviet Union, as well as a few foreign scientists attended the conference. Approximately 100 reports were given. The majority of the talks dealt with the luminescence of alkali-haloid crystalline phosphors. Reports were given by:

F. D. Klement, I. A. Parfianovich, L. M. Shamovskiy, M. L. Kats, Ch. B. Lushchik and others on the Kinetics of Luminescence of These Phosphors, the Exiton and Ion Processes Taking

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Place in Them, the Problem of Volume and Surface Distribution of Centers of Luminescence.

Ye. Nad' (Hungary), V. V. Antonov-Romanovskiy and others on the Process of Electric Luminescence.

F. M. Pekerman on the Production of Electro-Luminophores.

I. N. Orlov and others on the Practical Application of Electric Luminescence.

Ye. I. Panasyuk on the Production of Mono-Crystals of Zinc Sulfide.

V. Ye. Oranovskiy, B. T. Fedyushin on the Study of Electric Luminescence of Zinc Sulfide Mono-Crystals.

N. A. Tolstoy and Collaborators, P. B. Yashchin (Poland), M. V. Fok, K. S. K. Pebane, F. I. Vergunas on the Photo-Luminescence of Zinc Sulfide Luminophores.

N. A. Gorbacheva on the Synthesis of a New Group of Fluorine Phosphate Luminophores.

Yu. S. Leonov on the Synthesis of Mixed Tungstates Activated by Uranium.

M. Yu. Alsalu discovered blue luminescence, unusual with manganese, in the meta-antimonate of strontium with manganese.

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The Luminescence of Crystalline Phosphors and Its Application. All-Union  
Conference in Moscow

Ye. G. Vasil'yeva, S. A. Fridman on the first-time adoption  
of thermographic analysis for the research of zinc sulfide  
luminophores.

It was noted that practical research has not yet been suf-  
ficiently developed.

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SOV/51-7-2-15/34

AUTHORS: Vinokurov, L.A. and Fok, M.V.

TITLE: On the Simultaneous Action of Photo- and Electro-Excitation on Electrophosphors. (Ob odnoveremennom deystvii foto- i elektrovozbuzhdeniya na elektroluminofory)

PERIODICAL: Optika i spektroskopiya, 1959, Vol 7, Nr 2, pp 241-243 (USSR)

ABSTRACT: The authors found that photo- and electro-excitation are not additive: in some cases the luminescence brightness due to simultaneous excitation was higher and in other cases it was lower than the sum of the brightnesses of both types of luminescence. The former situation was called the positive non-additivity, the latter - the negative non-additivity. By altering the conditions of excitation one could alter the positive non-additivity into the negative non-additivity and conversely. At a certain ratio of the photo- and electro-excitation intensities exact additivity could be obtained: this is shown by the straight line in Figs 1 and 2. In two ZnS-Cu,Al phosphors the maximum observed non-additivity amounted to ~10%. Phosphor Nr 1 (cf Fig 1) stores a small light-sum at room temperature. Its photoluminescence brightness depends non-linearly on the intensity  $E$  of the exciting light: the brightness is proportional to  $E^{3/2}$  which indicates strong external quenching. The phosphor Nr 2

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(cf Fig 2) stored a considerable light-sum and its photoluminescence brightness was almost exactly proportional to the excited light-intensity indicating that in this case external quenching was small. Figs 1 and 2 show clearly that the ratios of the electrical field and the light intensity required to achieve exact additivity are quite different in the case of the two phosphors. The causes of the observed behaviour are discussed and it is shown that the condition of the exact additivity is given by

$$\alpha_e/\alpha_l = \text{const.},$$

where  $\alpha_e$  and  $\alpha_l$  are the number of acts of ionization of luminescence centres per unit volume and per unit time due to the electric field and the light respectively. There are 2 figures and 5 Soviet references.

SUBMITTED: October 13, 1958

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